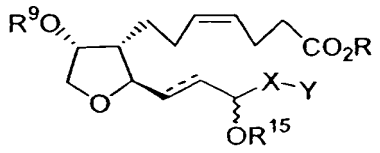
WE CLAIM:

1. A process for the preparation of 11-oxa prostaglandin analogs of formula I:



I

wherein:

R is H or a pharmaceutically acceptable cationic salt moiety, or CO_2R forms a pharmaceutically acceptable ester moiety

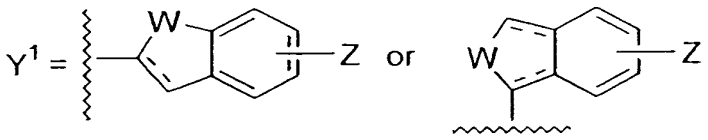
R^9O and $R^{15}O$ are the same or different and constitute a free or functionally modified hydroxy group;

--- is a single or *trans* double bond;

X = $(CH_2)_q$ or $(CH_2)_qO$; q = 1-6; and

Y = a phenyl ring optionally substituted with alkyl, halo, trihalomethyl, alkoxy, acyl, or a free or functionally modified hydroxy or amino group;

or X-Y = $(CH_2)_mY^1$, m = 0-6,



wherein:

W = CH_2, O, $S(O)_m$, NR^{10}, CH_2CH_2, CH=CH, CH_2O, $CH_2S(O)_m$, CH=N, or CH_2NR^{10};

m = 0-2;

R^{10} = H, alkyl, acyl;

Z = H, alkyl, alkoxy, acyl, acyloxy, halo, trihalomethyl, amino, alkylamino, acylamino, OH; and

---- = single or double bond;

comprising:

a) converting 1,4-anhydro-D-glucitol to the corresponding ortho ester;

b) silylating the ortho ester to yield to the corresponding silyl ether;

c) removing the ortho ester group of the silyl ether to yield to the corresponding triol;

d) converting the triol to the corresponding acetonide;

e) oxidizing the free OH group of the acetonide to yield to the corresponding ketone;

f) converting the ketone to the corresponding unsaturated ester;

g) hydrogenating the unsaturated ester to yield the saturated ester;

h) reducing the saturated ester to yield to the corresponding alcohol;

i) converting the alcohol to the corresonding sulfonate;

j) reacting the sulfonate with cyanide to yield to the corresponding nitrile;

k) oxidatively cleaving the acetonide grouping of the nitrile to yield to the corresponding nitrile aldehyde;

l) converting the nitrile aldehyde to the corresponding enone;

m) reducing the enone to yield to the corresponding alcohol having desirable and undesirable epimeric forms;

n) silylating the alcohol to yield to the corresponding bis silyl ether;

o) reducing the bis silyl ether to yield to the corresponding aldehyde;

p) condensing the aldehyde to yield to the corresponding ester;

q) desilylating the ester to yield to the corresponding end product; and

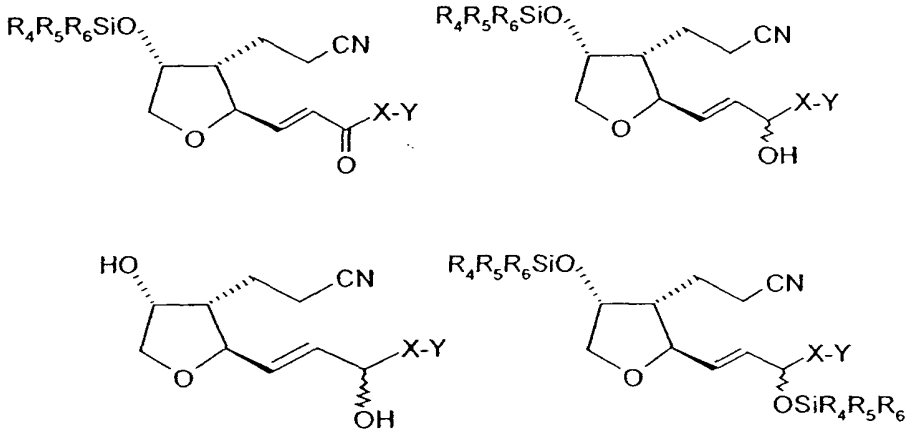
r) removing undesirable epimeric form.

2. The process of claim 1, wherein removal of the undesirable epimeric form occurs before silylating the alcohol produced in step (m) above.

3. The process of claim 2, wherein the alcohol produced in step (m) above is desilylated before removal of the undesirable epimeric form.

4. The process of claim 1, wherein removal of the undesirable epimeric form occurs after desilylating the ester produced in step (p) above.

5. A process for the preparation of 11-oxa prostaglandin analogs, comprising the use of one or more intermediates selected from the group consisting of:



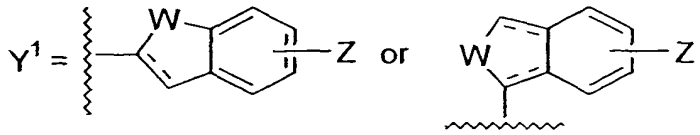
wherein:

R4, R5, R6 = same or different = alkyl, cycloalkyl, or aryl

X = $(CH_2)_q$ or $(CH_2)_qO$; q = 1-6; and

Y = a phenyl ring optionally substituted with alkyl, halo, trihalomethyl, alkoxy, acyl, or a free or functionally modified hydroxy or amino group;

or X-Y = $(CH_2)_mY^1$, m = 0-6,



wherein:

W = CH_2, O, $S(O)_m$, NR^{10}, CH_2CH_2, CH=CH, CH_2O, $CH_2S(O)_m$, CH=N, or CH_2NR^{10};

m = 0-2;

R^{10} = H, alkyl, acyl;

Z = H, alkyl, alkoxy, acyl, acyloxy, halo, trihalomethyl, amino, alkylamino, acylamino, OH; and

---- = single or double bond.

6. The process of claim 5, where the one or more intermediates are selected from the group consisting of: